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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,998	01/09/2006	Jens Schafer	INA-PT163 (4223-18-US)	7047
3624	7590	10/31/2008		
VOLPE AND KOENIG, P.C. UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			EXAMINER WHITTINGTON, KENNETH	
			ART UNIT	PAPER NUMBER
			2862	
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			10/31/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,998	<b>Applicant(s)</b> SCHAFFER ET AL.	
	<b>Examiner</b> KENNETH J. WHITTINGTON	<b>Art Unit</b> 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 5-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/15/06;1/9/06</u>  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Group I, comprising claims 1-4, in the reply filed on September 22, 2008 is acknowledged. Accordingly, non-elected claims 5-14 are withdrawn from consideration.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. It is noted that the single drawing does not contain sufficient features to show the features of the claims. Therefore, the detail of the crankshaft trigger wheel, the detail of the triple shaft gearbox including its connections to other components, the detail of the three phase motor having Halls sensors installed therein in the manner as recited in the claims must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

Art Unit: 2862

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claim1 is objected to because of the following informalities: it introduces three regulators, i.e., " camshaft regulator", "an electronic regulator" and "an electromechanical regulator". After reviewing the specification, there appears to be only one regulator, not three. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 recites the sensors can be installed in components of the BLDC motor, "which rotate at the rotor rpm". However, the sensors are stationary and measure the rotational movement of the permanent magnet rotor as noted in the specification at page 10, lines 10-13. Thus, the sensors only measure the

Art Unit: 2862

rotating magnetic field of the permanent magnet, they do not themselves rotate. Thus, these claims are unclear as to what is or should be rotating at the rpm.

As a matter of suggestion only, simply amending this claim to simply delete the quoted phrase above would overcome this rejection.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Okuda et al. (US6129061), hereinafter Okuda.

Regarding claim 1, Okuda discloses a device for determining an angle of rotation between two shafts, especially between a camshaft and the crankshaft of an internal combustion engine (See Okuda FIG. 1 and col. 6, line 59 to col. 7, line 3), which has:

a camshaft regulator with an electronic regulator (See FIG. 1, item 20 and FIGS. 9-13, item 130)

means for determining the angle of rotation position of the camshaft and the crankshaft (See FIG. 1, item 41 and FIG. 12, items 155a-c),

a crankshaft trigger wheel with reference and trigger marks is fixed to the crankshaft for determining the angle of rotation position of the crankshaft (See FIG. 1, note sensor 41 and trigger wheel on crankshaft 4) and

Art Unit: 2862

an electromechanical camshaft regulator is provided (See FIGS. 1 and 9-13, note item 20 or 130), which has a triple-shaft gearbox, having a first shaft that is locked in rotation with the camshaft, a second shaft that is connected via a camshaft driving wheel to the crankshaft, and a third shaft as a regulating shaft that is connected to a permanent magnet rotor of a BLDC motor (See FIGS. 1 and 11, note shafts for gears 13 or 113 and motors 20 or 130),

wherein the BLDC motor has a housing-fixed stator with preferably three phases and an electronic commutation, which is controlled through commutation signals (See FIG. 12, note three Hall sensors 155a-c which measure the commutation signals from the magnets and the coils), which are used simultaneously for determining an angle of rotation position of the camshaft and together with signals of the crankshaft trigger wheel for calculating the angle of rotation between camshaft and crankshaft (See col. 11, line 64 to col. 12, line 9 and see col. 6, line 59 to col. 7, line 3).

Regarding claim 2, Okuda discloses the crankshaft trigger wheel is formed as a ring gear or resolver (See FIG. 1, note sensor 41 and ring gear associated therewith) and the commutation signals can be generated by Hall sensors or reluctance sensors, through optical, inductive, or capacitive sensors, or without sensors through self-induction through phases of the stator (See FIGS. 9-13, note Hall sensors 155a-c).

Regarding claim 3, as best understood in view of the 112 rejection noted above, Okuda discloses the sensors can be installed in components of the BLDC motor, which rotate at the rotor rpm (See FIG. 12, note sensors 155a-c, note also rotating magnets 134 which rotate at the rotor rpm).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda in view of Majima et al. (US6681741), hereinafter Majima. Regarding this claim, Okuda teaches monitoring and calculating the phase difference or angle between the crankshaft and camshaft of the engine, but not explicitly any memory therein. Majima teaches a method for monitoring the rotation of the camshaft and crankshaft wherein a RAM or an EPROM are provided in a controller or an active, memory-equipped Hall sensor, which store and/or make detectable information in standstill or during startup of the internal combustion engine (See Majima col. 6, lines 4-58). It would have been obvious at the time the invention was made to store information in a RAM as taught by Majima in the apparatus of Okuda. One having ordinary skill would have done so to make such information usable later, such as during later start-up times (See Majima FIG. 4 and col. 6, line 47 to col. 9, line 4).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH J. WHITTINGTON whose telephone number

Art Unit: 2862

is (571)272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenneth J Whittington/

Primary Examiner, Art Unit 2862